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10/562,873	12/29/2005	Josef Lutz	AT 030037	6752

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EXAMINER

BAYOU, AMENE SETEGNE

ART UNIT	PAPER NUMBER
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4147

NOTIFICATION DATE	DELIVERY MODE
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03/06/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/562,873	Applicant(s) LUTZ, JOSEF	
	Examiner AMENE S. BAYOU	Art Unit 4147	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/13/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure of the specification is objected to because it is not according to the proper layout. The application misses to incorporate the cross reference of the related applications (which is PCT/IB04/51029). It also fails to list the titles for background of the invention, brief summary of the invention, brief description of the drawings, detailed description of the invention. Correction is required. See MPEP chapter R, 37 CFR 1.77(b)

Claim Rejections - 35 USC § 112

2. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. In re claim 23 the phrase "structured surface" is ambiguous and indefinite causing confusion. We interpret the phrase to mean "rough surface" based on the disclosure. Correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that forms the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-9, 11-22, and 23 (as best understood), are rejected under 35 U.S.C. 102(e) as being unpatentable over Bryant et al (US patent number 6856073B2).

6. In re claim 1, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- A device (100) for generating a medium stream, which device (100) comprises a chamber (50), which chamber (50) comprises chamber walls (12A,12B) lying opposite one another and at least one medium opening for the medium stream and is equipped with a diaphragm means (10), which diaphragm means (10) is provided and constructed for generating the medium stream and which diaphragm means (10), in an inactive operating state of the device (100), is arranged substantially untensioned in the chamber (100) between the chamber walls (12A,12B) and associated with which diaphragm means (10) are drive means (102), responsive to electrical drive signals, for driving the diaphragm means (10) to deform the same, the drive means (102) being arranged to impose a deformation on the diaphragm means (10) in an active operating state of the

device (100), during which deformation the diaphragm means (10) have an inner mechanical tension, in figure 1,6 and 17C.

7. In re claim 2, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The drive means (102) comprise electrodes (14,16) arranged on the chamber walls (12A,12B) lying opposite one another, in figure 17C.

8. In re claim 3, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10) comprises a metal foil, in column 5, line 15.

9. In re claim 4, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10) comprises a foil made of a dielectric material, in column 8 lines 12-14.

10. In re claim 5, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10) consists at least partly of piezoelectric material, in column 5 ,lines 27 and 28.

11. In re claim 6, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10) comprises an electrode, in column 8 lines 12 and 13.

12. In re claim 7, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10) comprises two end regions provided a distance apart from one another, which end regions are fixed in the chamber (50), in figure 1, 6 and figure 17C.

13. In re claim 8, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The drive means (102) contain an electromechanical drive element, and the diaphragm means (10) has an end portion that is connected to the electromechanical drive element, in figure 1, and column 4 lines 32-35.

14. In re claim 9, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The chamber (50) is of substantially cuboidal construction and comprises two end walls lying opposite one another, in figure 1 and column 4 lines 55-58 and column 6 line 24-26.

15. In re claim 11, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10) has an at least substantially constant thickness, in figure 7.

16. In re claim 12, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10) is fixed with two opposing end regions to the end walls of the essentially cuboidal chamber (50), in figure 1 and 17C.

17. In re claim 13, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The drive means (102) are designed to impose a deformation having at least a pre-determinable frequency, in column 6 lines 45-57 .

18. In re claim 14, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The drive means (102) are designed to impose a cyclic deformation in the form of a traveling wave on the diaphragm means (10), in column 4, lines 18-35.

19. In re claim 15, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (12 containing 10) is fixed with one end region close to one end of the cuboidal chamber to the one chamber wall of the mutually opposed chamber walls and with an opposite end region close to the opposite end of the chamber to the other chamber wall of the mutually opposed chamber walls (12A and 12B), in figure 17C.

20. In re claim 16, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The diaphragm means (10 in 12) comprises a transition portion extending in operation substantially at right angles to the chamber walls (12A and 12B) lying opposite one another, in figure 17C.

21. In re claim 17, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

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- Medium openings are provided at both ends of the chamber ,in figure 17C and column 4 lines 18-28.

22. In re claim 18, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- The medium stream is a stream of a gaseous medium, in column 1 lines 49-50.

23. In re claim 19, Bryant et al '073 B2 discloses the a device for the generation of sound by means of the medium stream generated because It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. ***Ex parte Masham, 2 USPQ2d 1647 (1987).***

24. In re claim 20, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- A device (100) which is provided as pump device for the medium stream, in figure 1 and column 4 line 1.

25. In re claim 21, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

- A device (100) wherein a number of chambers are provided in the device (100), which chambers are arranged in one unit, in figure 3 and column 4,lines 36-45.

26. In re claim 22, Bryant et al '073 B2 discloses an electro-active device using radial electric field piezo-diaphragm for control of fluid movement including:

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- The diaphragm means and/or the chamber walls have an insulating layer, in column 8, lines 10-33.

27. In re claim 23, Bryant et al '073 B2 inherently discloses the claimed invention because every macro surface have a certain degree of roughness.

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. Claim 10, is rejected under 35 U.S.C 103(a) as being unpatentable over Bryant et al '073 B2 in view of Yamamoto et al (US patent number 4600076).

30. In re claim 10, Bryant et al '073 B2 discussed discloses the claimed invention but fails to disclose:

- The chamber comprises at least two medium openings provided spaced apart from one another.

However Yamamoto et al '076 teaches a device for attenuation of pulsation in piping systems having :

- Fluid chamber comprising multiple openings (orifices) to dampen pulsation in column 4 line 3-10.

31. It would have been obvious for one skilled in the art at the time of invention to modify the pump of Bryant et al '073 B2 to include various orifices in the chamber as taught by Yamamoto et al '076 in order to dampen pulsation since it is well known in

the art to use orifices as acoustic impedance elements in fluid flow chambers as one method of reducing pulsation or vibration.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamamoto et al (US patent number 4485325) discloses a housing and mounting for a chip-like piezoelectric vibrator component . Dervet (US patent publication number 2002/0146333A1) a vibrating membrane fluid circulator. Sutton et al (US patent 5338164) discloses a positive displacement micro pump.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on 571-272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amene S Bayou
Examiner
Art Unit 4147

/Ninh H. Nguyen/

Primary Examiner, Art Unit 3745